PHENIX

TECHNICAL SUPPORT 2014

PHENIX WEEKLY PLANNING

July 31, 2014

Don Lynch

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Last 2 Weeks

TECHNICAL SUPPORT 2014

- Move EC to AH
- Install plates, 20 ton cart and manlift
- Move MuID collars to AH
- Disassemble F/VTX from CM and move to Physics for repairs
- Continue assembly of MPC-Ex North
- Station 1 South scaffold installed
- Continue sPHENIX support
- Remove East vertical lampshade
- Begin removal of MPC-Ex prototype
- Prep for Summer Sunday

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Next Week

- Finish MPC-Ex prototype removal
- Take down South station 1 scaffold
- Move MMS South
- Move CM South
- Install Station 1 North scaffold
- Begin prep for MPC-Ex North installation
- MPC North removal of failed modules repair/reinstall
- VTX/FVTX Repairs repairs continue
- Continue assembly of MPC-Ex North
- Continue sPHENIX support

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2014 planned Technical Support & 2014 Shutdown

Start of Shutdown Tasks (purge flammable gas, disassemble and stow shield wall, remove collars, move EC to AH, Move MMS south, etc.)	**Done**
Remove FVTX/VTX East & West to PHYSICS,	**Done**
Remove MMS east vertical lampshade	**Done**
Install scaffolding in Sta 1 South	**Done**
Repair and reinstall FVTX/VTX East &West	in progress -10/15/2014
VTX/FVTX Upgrade cooling lines, chiller preventive maintenance	in progress-10/6/2014
Troubleshoot intermittent water leak in MMS	7/30- 8/8/2014
Other Maint. In MMS	7/30-8/29/2014
Remove MPC-Ex prototype	7/28-8/1/2014
MuTr Sta 1 South troubleshooting and repairs	7/28-8/1/2014 ?
Maint. & Repairs for MPC South, BBC South, RPC1 South1	7/28-8/1/2014 ?
Summer Sunday prep AH, tours and restore AH	in progress-8/6/2014
Assemble & test MPC-Ex North, ready for installation	in progress-9/5/2014
Remove scaffolding from sta 1 south, Move CM South	8/4-8/5/2014
Install scaffolding in Sta 1 North	8/6-8/8/2014
Prep MPC-Ex North installation area	8/8-8/15/2014
MuTr Sta 1 & Sta. North troubleshooting and repairs	8/11-9/5/2014
MPC North-remove damaged crystals, repair as necessary, re-install	8/11-9/5/2014
Install new MPC-Ex North, thoroughly test before moving CM north	9/8-9/26/2014
Reinstall MMS east vertical lampshade	9/2-9/5/2014
Assemble & test MPC-Ex South, ready for installation	9/2-10/3/2014

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2014 planned Technical Support & 2014 Shutdown (cont'd)

Remove Sta 1 N scaffolds, Move CM North, Install scaffolding in Sta 1 S	9/29-10/3/2014
Install MPC-Ex South	10/6-10/24/2014
Reinstall, reconnect, re-survey and re-commission VTX/FVTX	10/16-11/26/2014
Other detector support	TBD
Infrastructure Maintenance and Improvement	TBD
Decommissioning of obsolete PHENIX detector equipment	TBD
sPHENIX Support	on-going
End of Shutdown Tasks (Move MS north, roll in EC , install collars, remove 10 ton cart, plates and manlifts, build shield wall, etc.)	10/27-11/26/2014
DC East & West maintenance & repairs	11/17-12/52014
Pink/White/Blue Sheets	12/1-12/19/2014
End of Shutdown Party	????
Start Flammable gas flow	????
Close shield wall, install radiation interlocks and prepare for run 14	12/31/2014
Start run 15	1/2/2015

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Muon Tracker Shutdown Work List – summer 2014

- testing as MPC-EX installed, particularly before closing Sta-1's
- **fix North Arcnet – N.2.7.1, North Sta-2 Oct-7 Chassis-1 (bad cable?) - Done**
- fix packets that were disabled for Run14
    - 11035,36 – South Sta-1 Quad-4 Chassis-3
    - **11267,68 – North Sta-2 Oct-7 Chassis-2 - Done**
- replace boards for most frequent FEM problems from run
    - 11195 - North Sta-1 Quad-3 Chassis-3?
        - might have already done this; check history (changed RX 3/14/12)
    - 11064 – South Sta-2 Oct-3 Chassis-3 - unreachable
- N341 HV trip problem?
- auto-reboots of ArcNet and iocondev's for calibration?

- Access needed:
    - South & North Sta-1
    - **Inside North Sta-2 on bottom Done**
- Main Issue – Manpower

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Work Permits for 2014 Shutdown

- **Start of Shutdown - Done**
- **VTX/FVTX East - Done, at CAD for approval**
- **MPC-Ex - Done, at CAD for approval**
- **MuTr Sta 1 N & S - Done, at CAD for approval (scaffold agreement done)**
- **MuTr North station 2/3 - Done**
- MuTr South station 2/3 & MMS South Water leak **- Done, at CAD for approval**
- DC East/West
- **MPC North - Done**
- End of Shutdown

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VTX/FVTX east & west repairs/
upgrades under way

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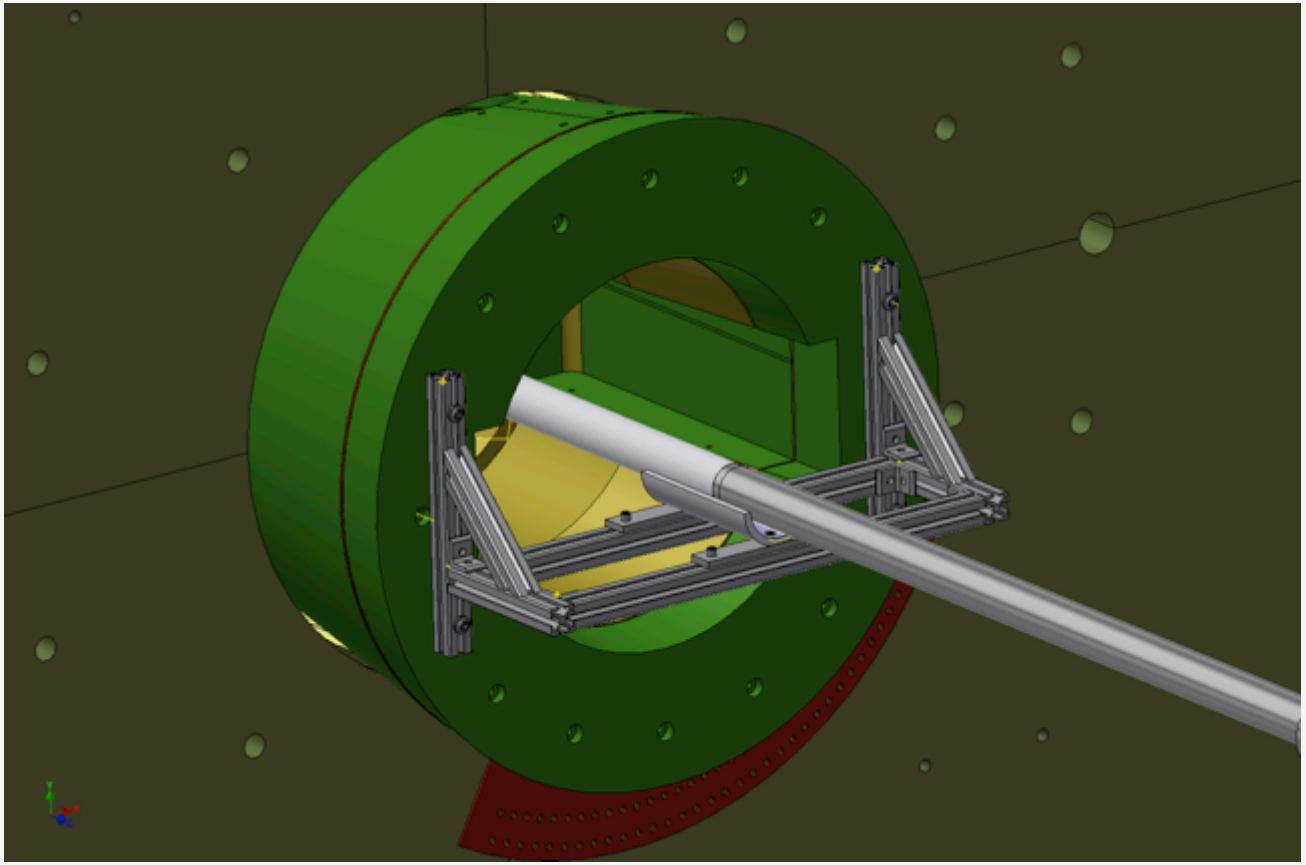
Post Run VTX/FVTX test results/consequences:

- Condensation likely cause of many strip-pixel and FVTX problems
- Need to better seal against condensation intrusion into VTX/FVTX shell
- Need to dismount FVTX/VTX West
- Need to disassemble East for FVTX, pixel and strip-pixel repairs
- Do not need to disassemble West, only repair FVTX, possible pixel/strip-pixel tests without disassembly?

- *All Tasks Completed?*

- *Other findings/consequences?*

MPC-Ex North & South



MPC-Ex North Beam pipe temporary support

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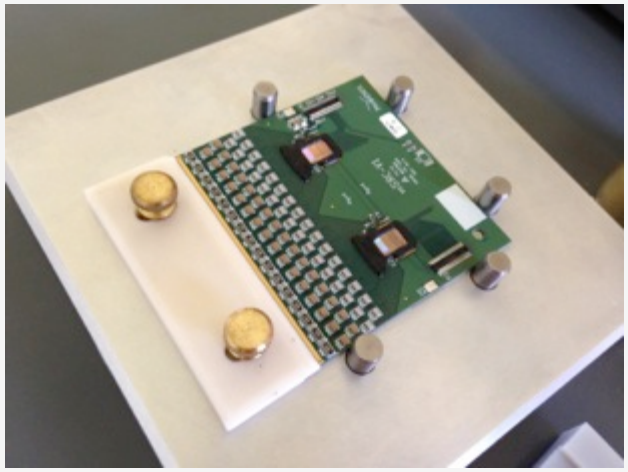

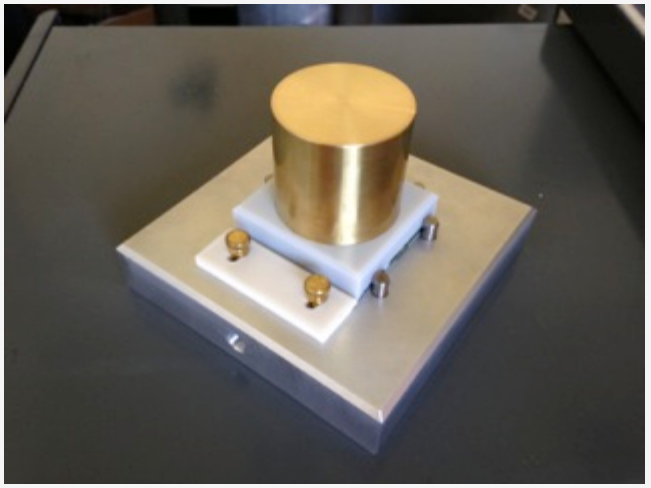

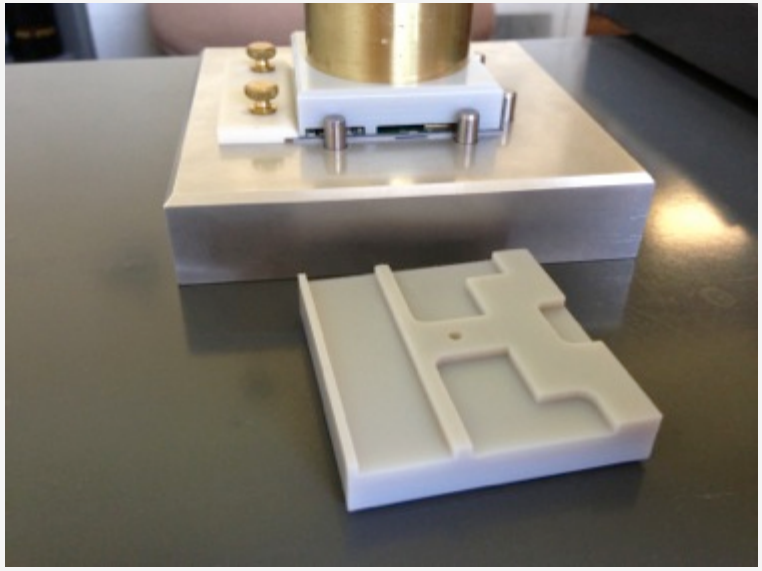

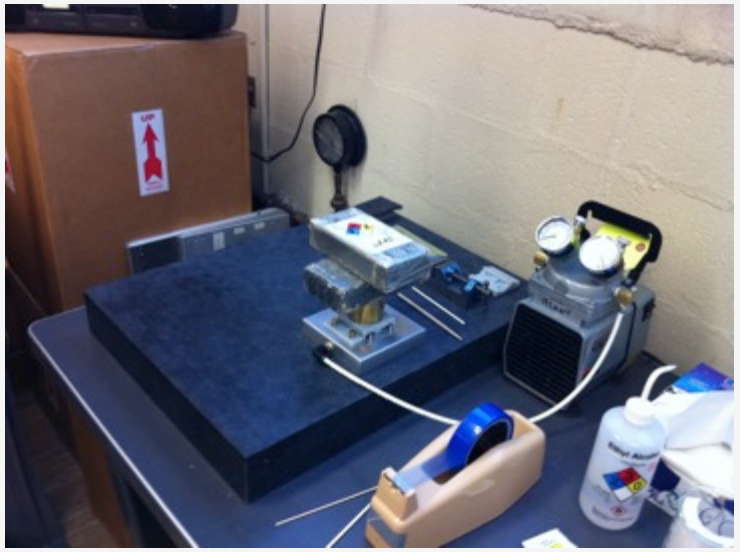

Micromodule Gluing tool micromodule parts and glued assembly currently in production

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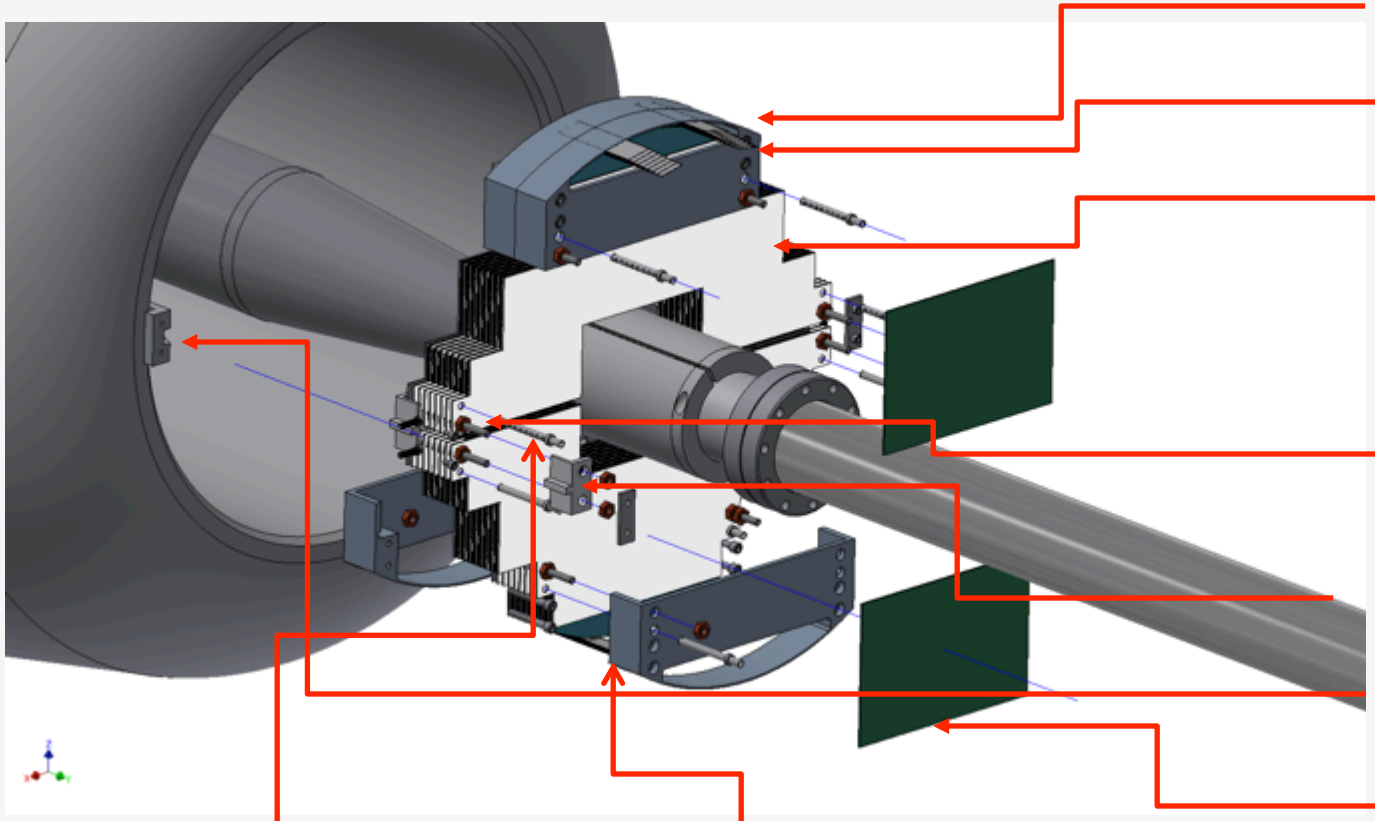
MPC-Ex Exploded view



Upper covers

Signal Cable pigtails

8 layers of tungsten & detector electronics backed by Delrin cover (top and bottom halves)

Threaded rods and spacers

Mounting tabs

Mounting clips

LV distribution boards

Lower covers

Cooling air manifolds

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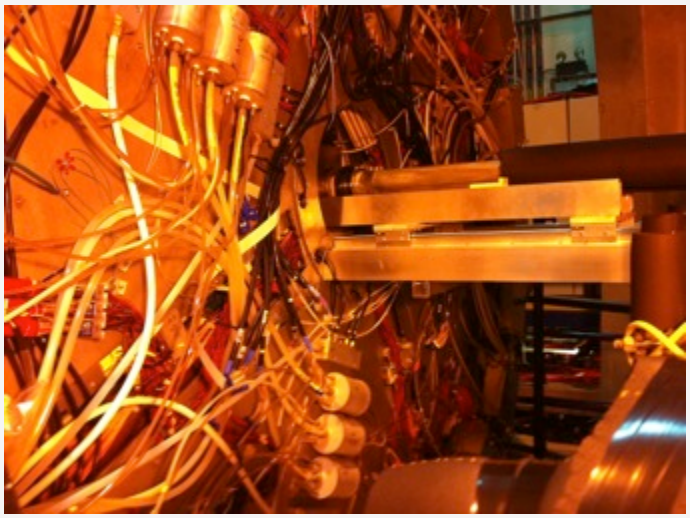
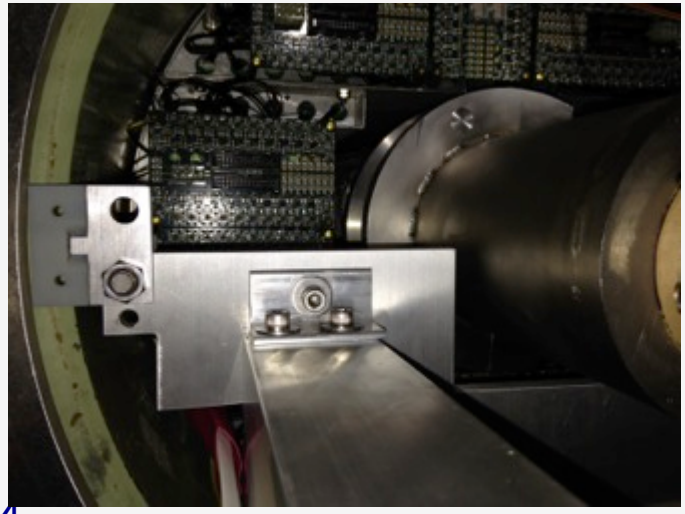
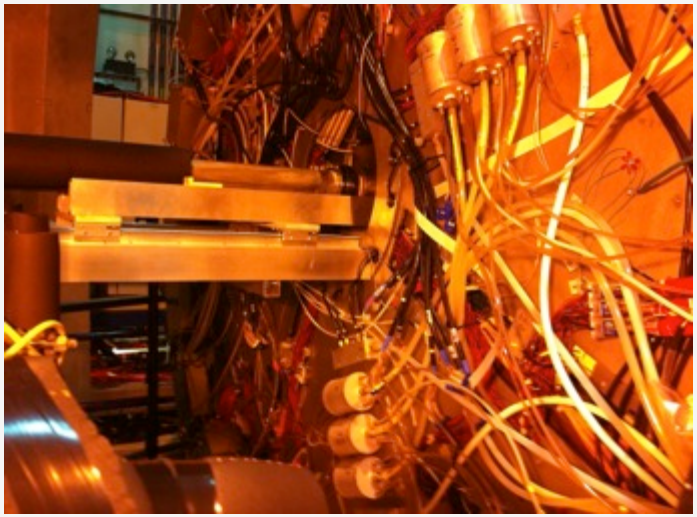
MPC-Ex N & S Final Installations this summer:

Prototype removal in progress
North installation prep
North Assembly
North Installation
North operational validation testing
South Installation prep
South Assembly
South installation
South operational validation testing

(Note: also need to MPC & MuTr Station 1 testing to assure no problems after MPC-Ex installations)







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MPC-EX Fabrication Summary

1. The newer modules all fit and have a gap.
2. The clock pickup is a little worse but still OK.
3. All remaining modules will follow the present procedure of manufacture.
4. For those brass spacer-nuts that are manufactured below design thickness (most as discovered by Mike L), we will shim them with brass washers up to design thickness.
5. All other items in the assembly will remain as originally designed.

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Other Shutdown work:

Request from E. Kistenev for 1 FCal module for R&D

- Parts at CS for test cutting – to be sent out to vendor with diamond cutter
- Scintillator plate also sent for cutting – Edouard following up

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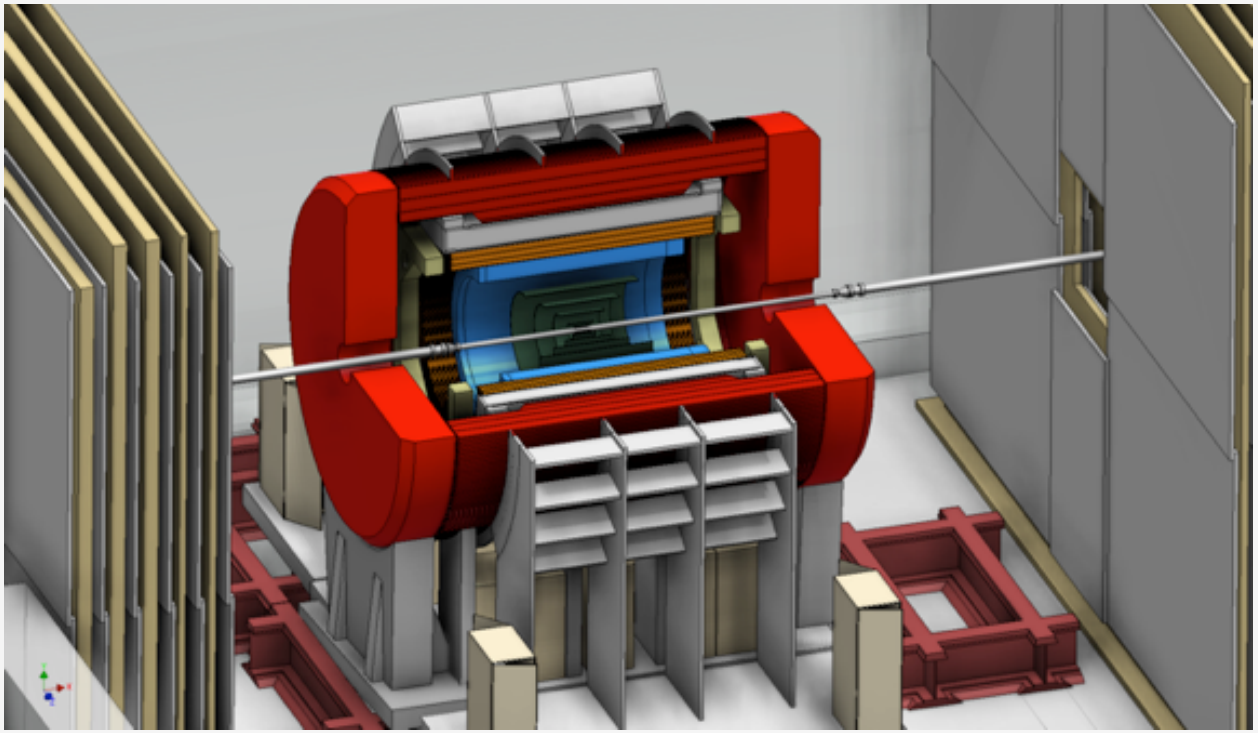
sPHENIX Update



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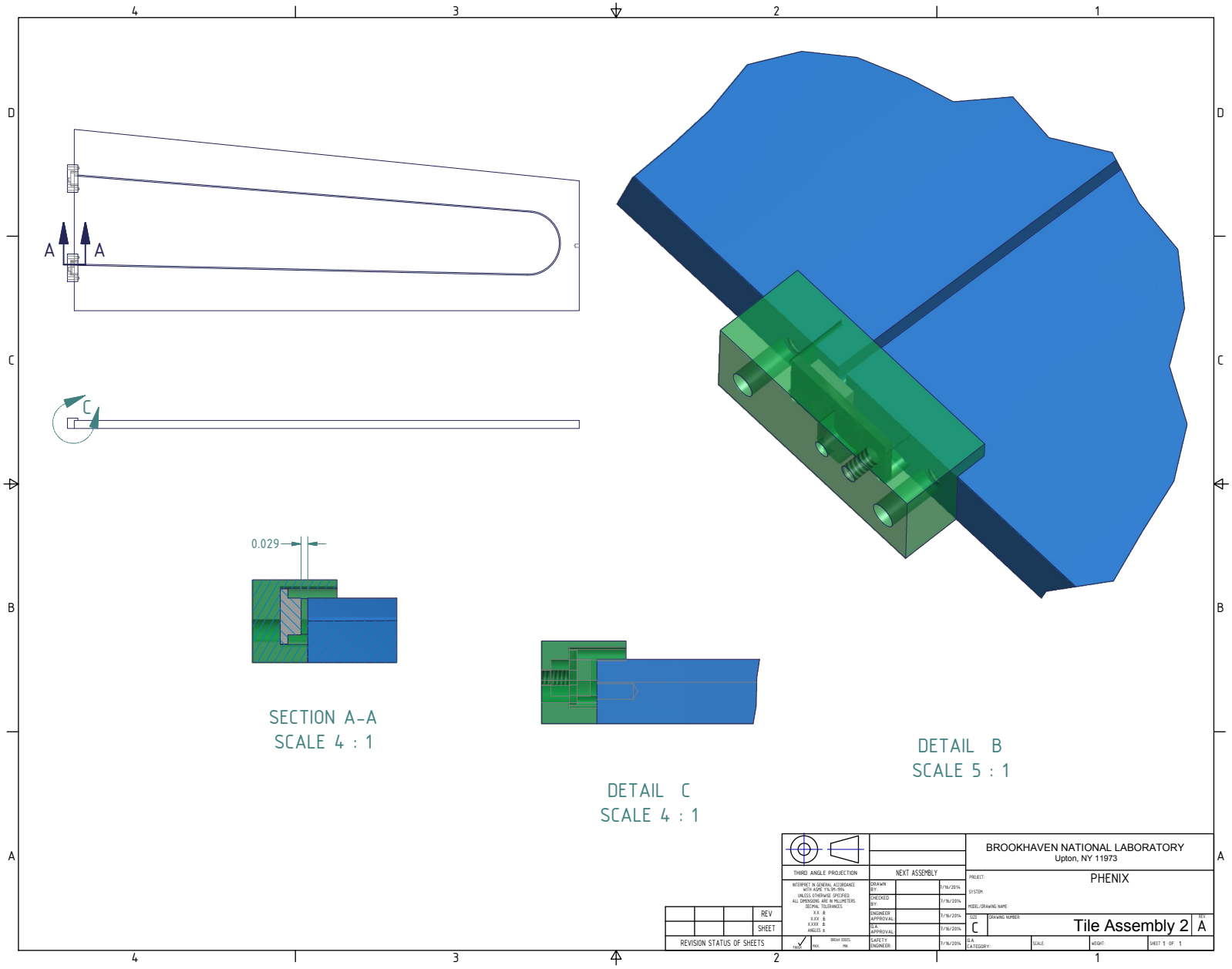

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BABAR Magnet Update

- Meeting yesterday at magnet division to discuss shipping
  - Shipping fixtures for magnet OK
  - Need shipping fixtures for valve box, Paul Kovach has potential design
- Need a transportation and handling review at CAD
- 4 week window to ship by Sep. 10

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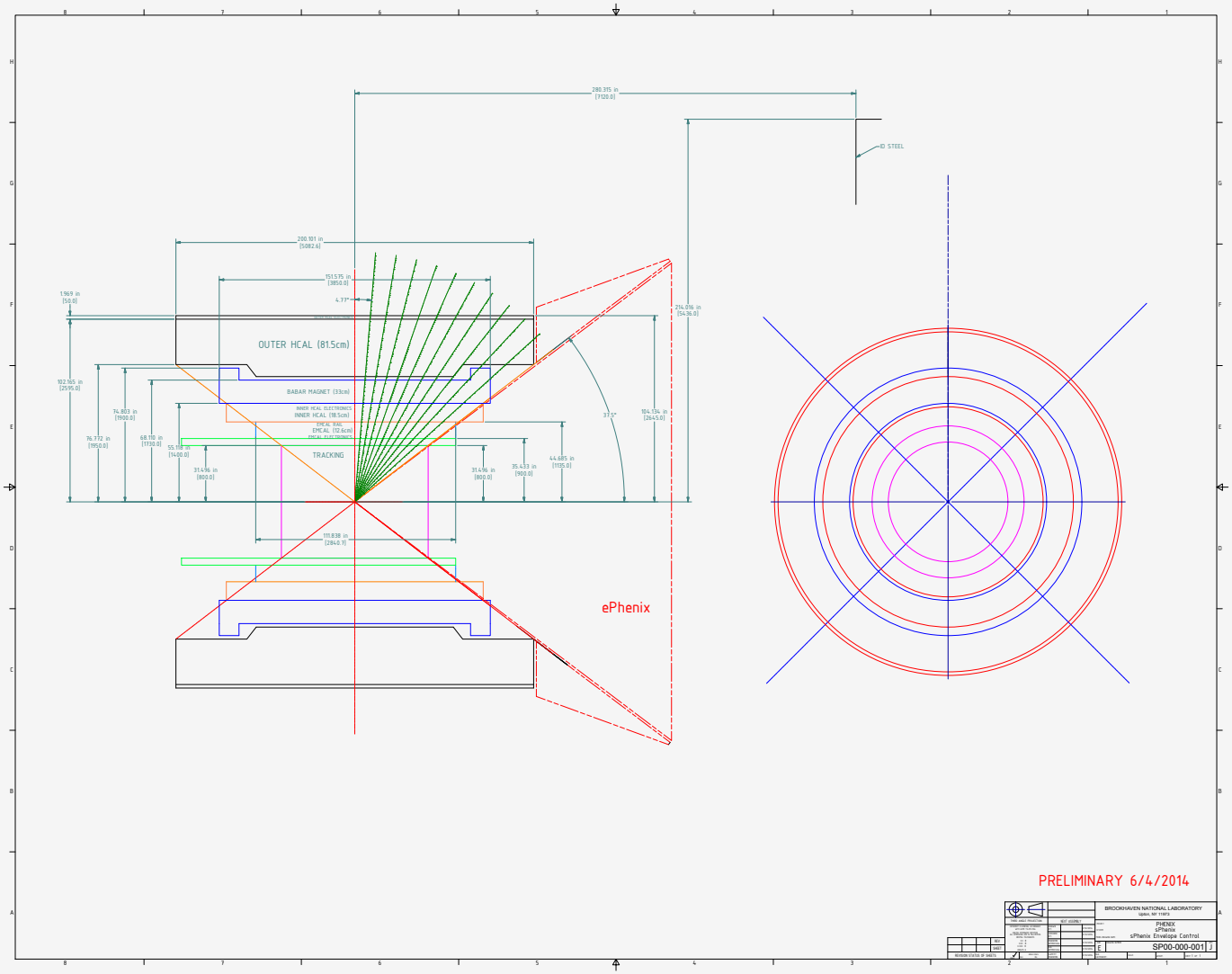
sPHENIX Envelope



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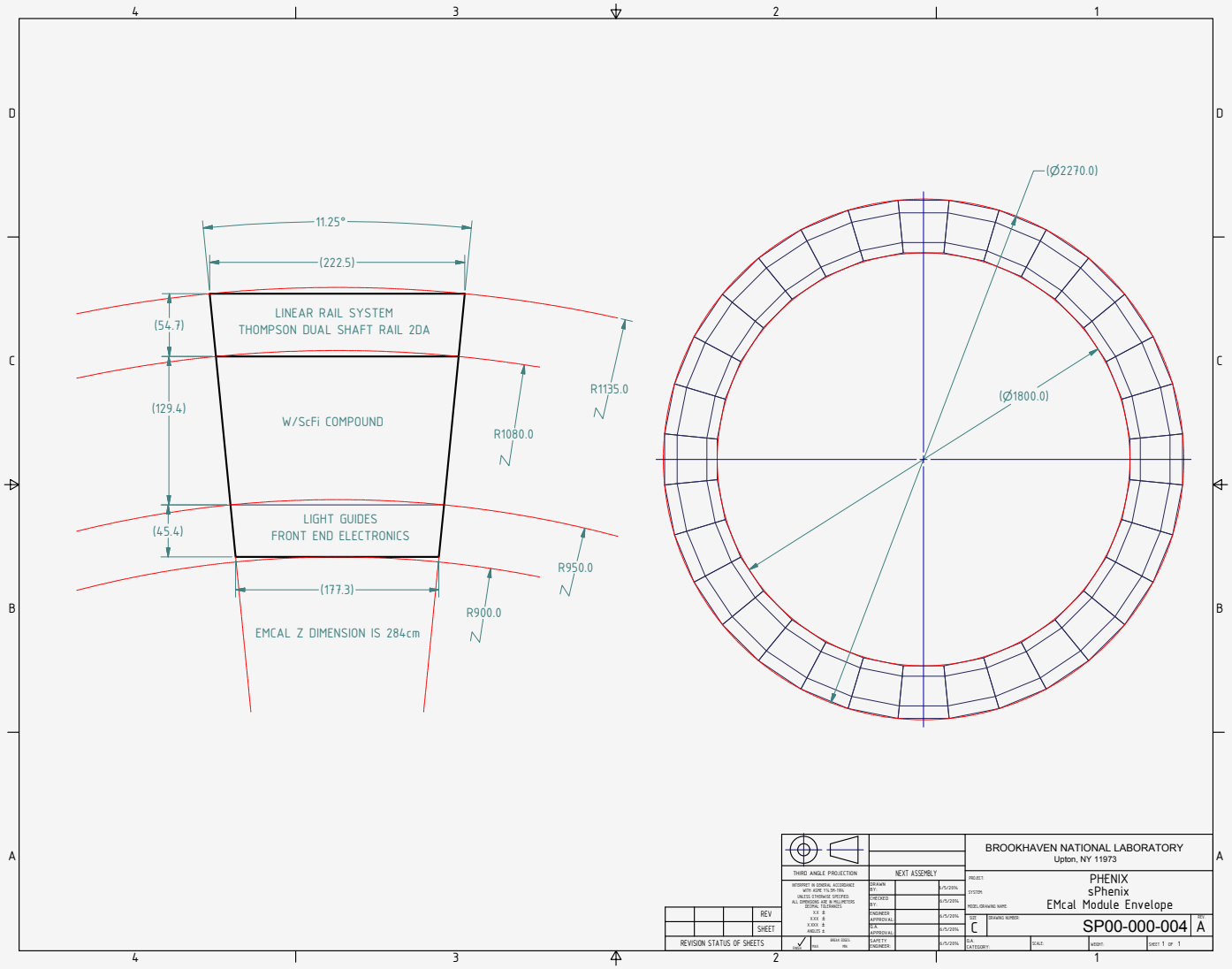
sPHENIX EMCal Envelope



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sPHENIX Magnet Envelope

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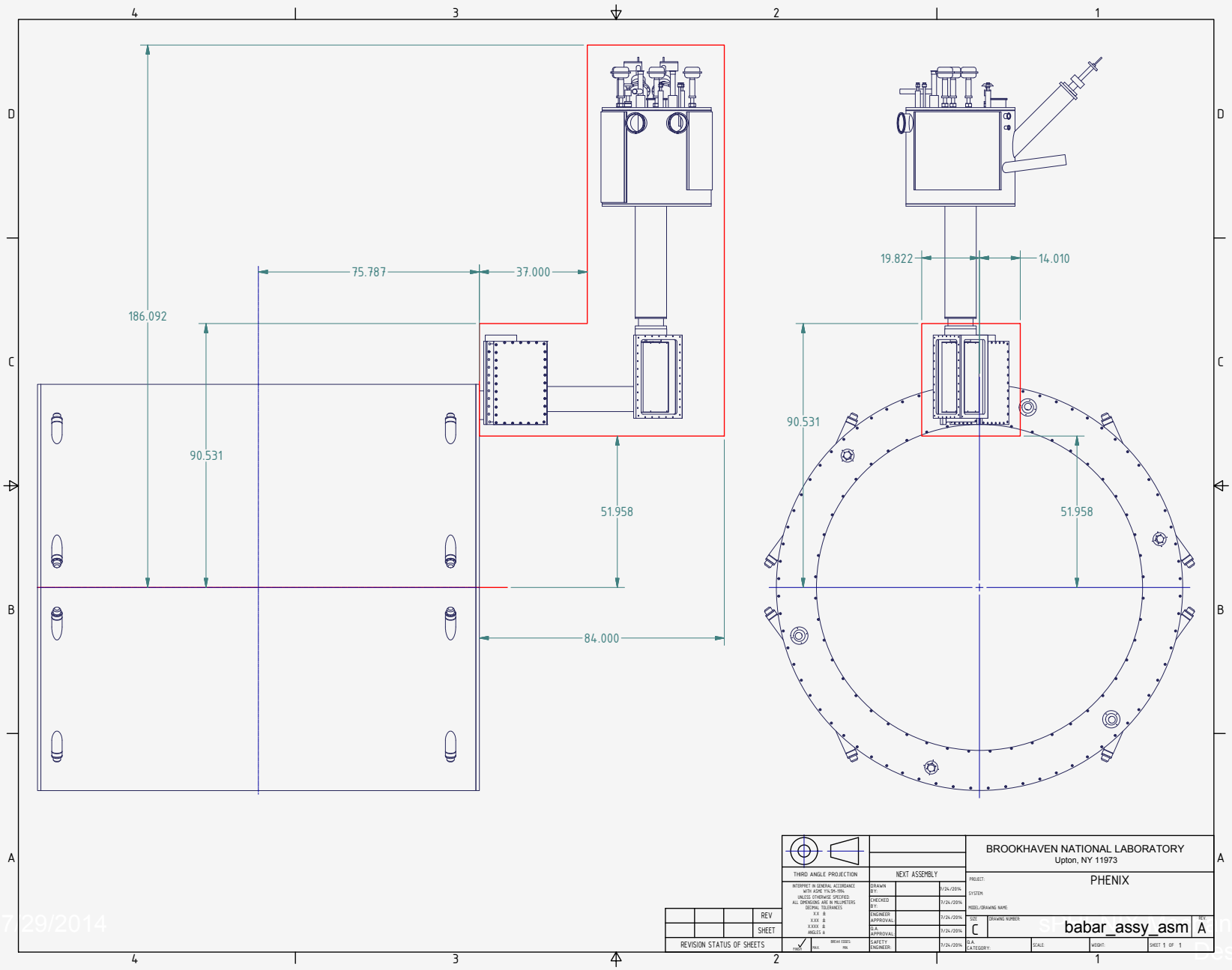
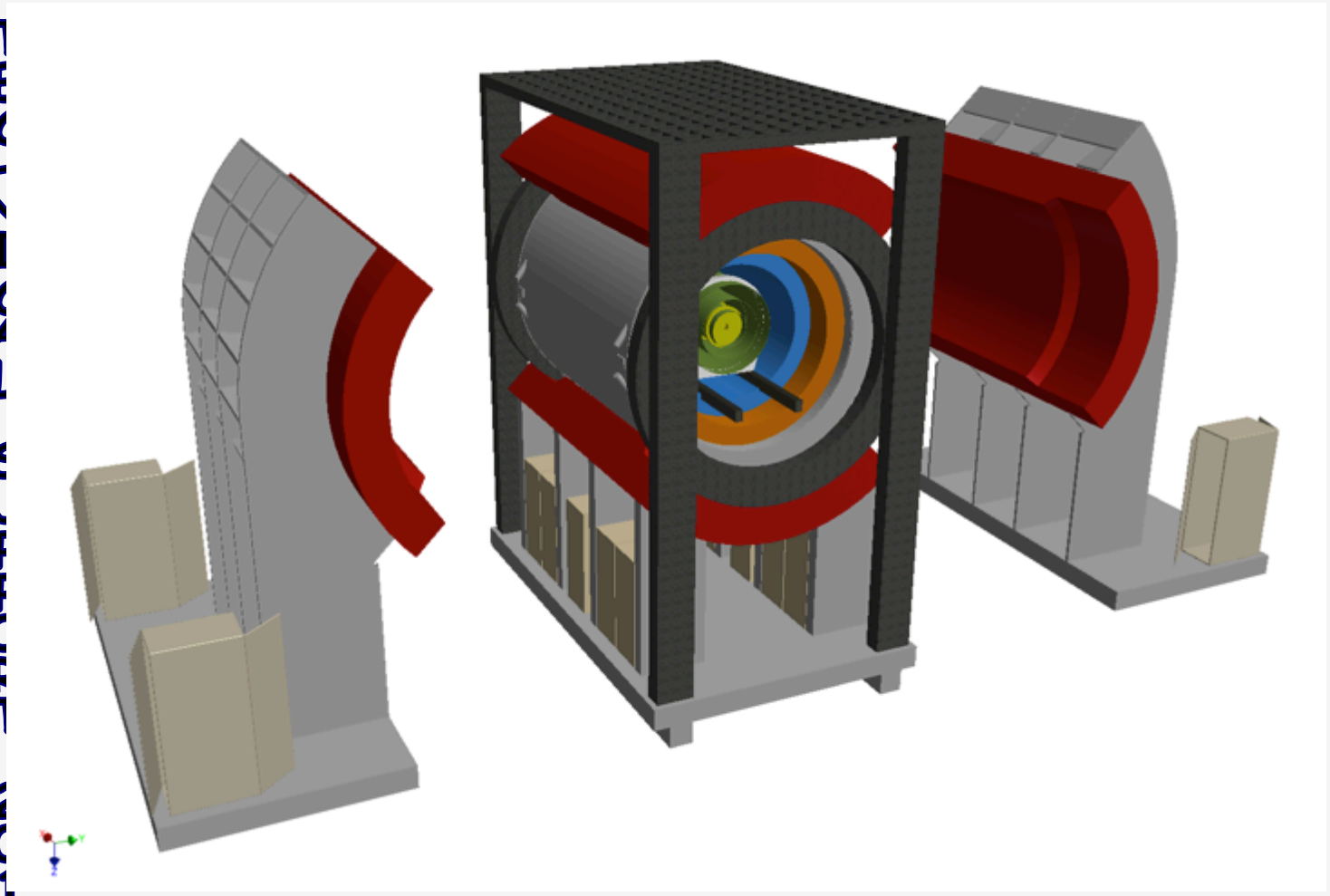


Mechanical support



Initial concept for external support, racks and upper bridge platform

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sPHENIX Infrastructure update

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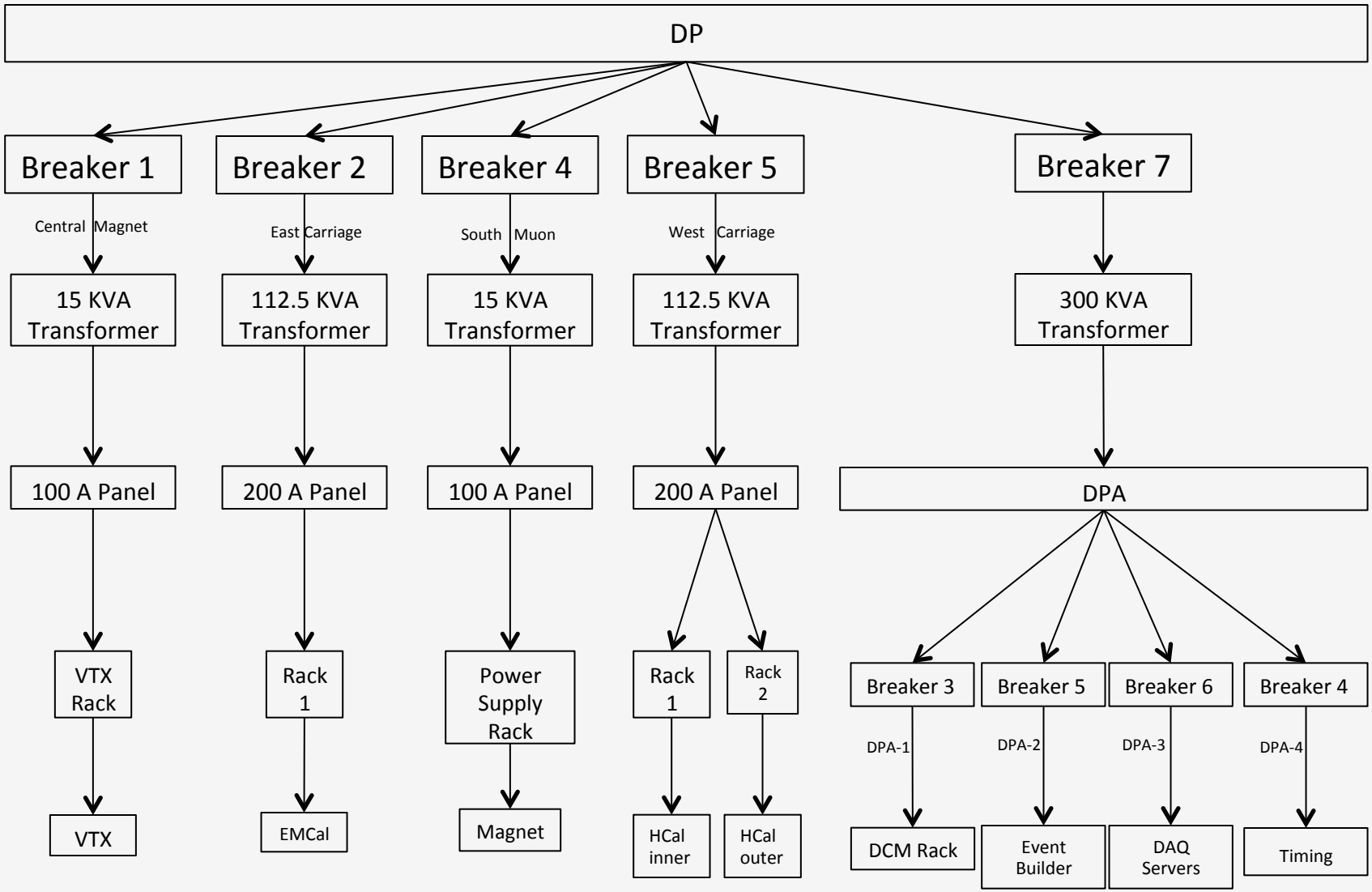
Power Supply Infrastructure



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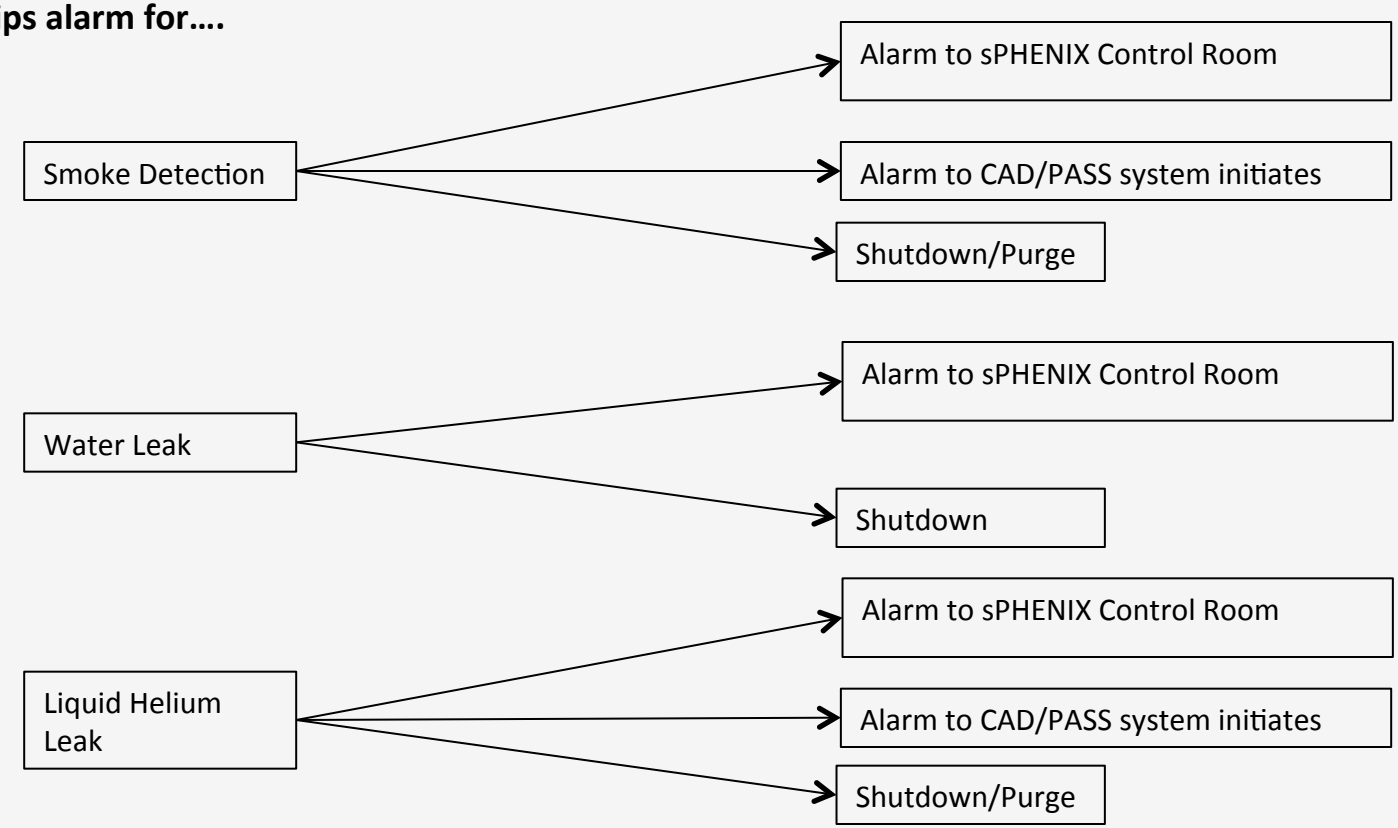
Safety System

Existing Infrastructure Changes

- Remove flammable gas detectors
- Convert from Relay logic to PLCs?
- PHENIX Control Room upgrade for helium sensors and monitoring
- CAD PASS system upgrade due to use of Liquid He in IR

If signal trips alarm for….



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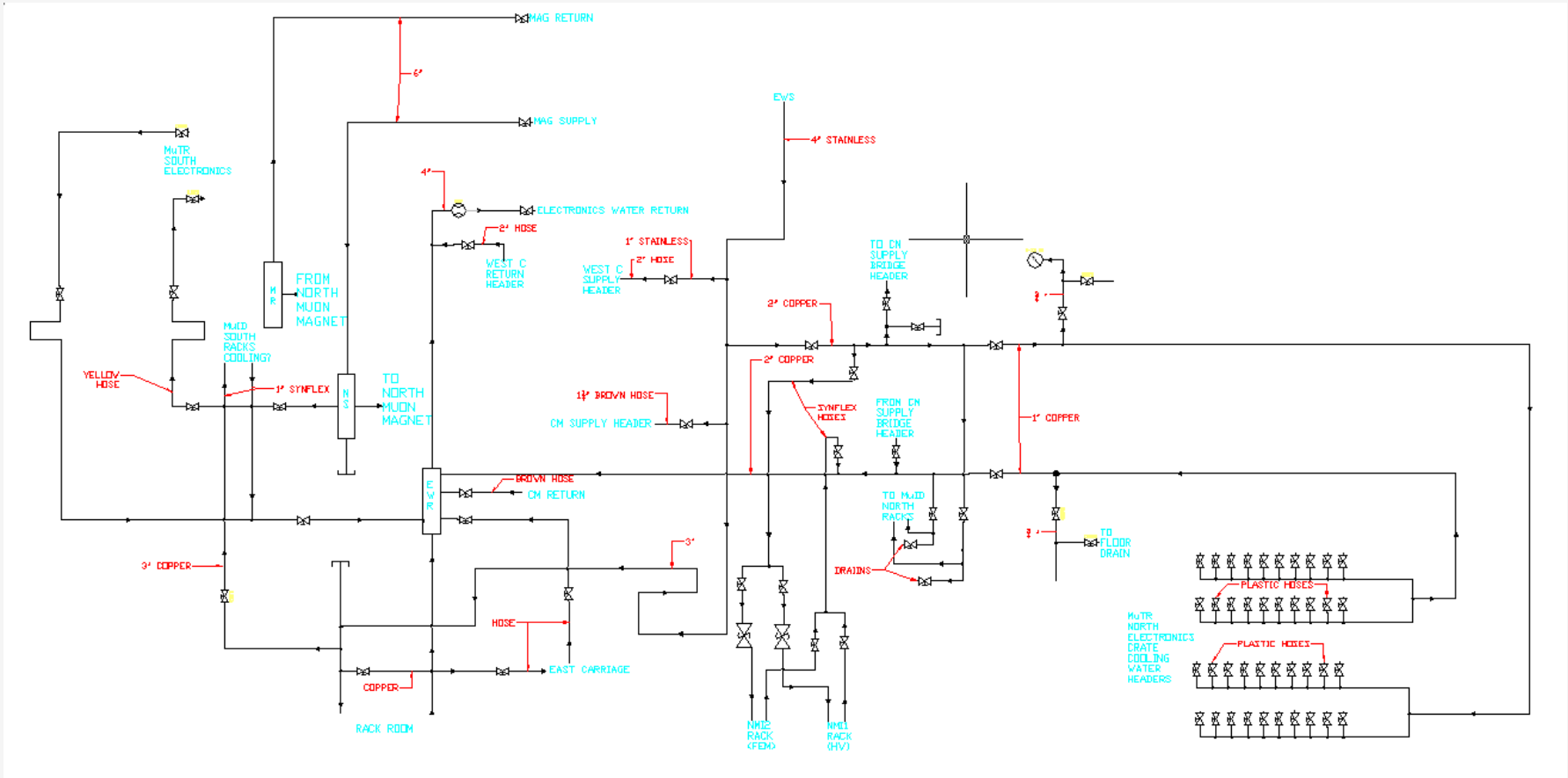
Existing Water Cooling Infrastructure



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PHENIX Decommissioning Plan update

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PHENIX Decommissioning Procedure

- In order to decommission, we need to know how the detectors were installed, what work permits are required, how long it will take, drawings of detectors/lifting fixtures, and most importantly which lifting fixtures were used for each detector.
- The following spreadsheet organizes all of these.

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Detectors	Procedures	Estimated Time of Disassembly	Work Permits	Drawings	Lifting Fixtures & Equipment
Drift Chamber	**Installation Procedure**: Attach two 20-Ft slings from the crane to the Drift Chamber's rear mount holes. Adjust one chain fall to 20-Ft length and attach this chain fall between the front central lift point and the crane. Lift crane to tension slings and remove mount pins holding the DC to rolling table. Lift detector and place on PHENIX cart, remove rigging gear and transfer it to the 12-Ton crane in the collision hall. Re-attach rigging gear and lift the detector from the cart in the collision hall using the 12-Ton crane. Place detector in park position on the south tracks. Move the PHENIX central magnet east to allow clear access for the second part of the lift and to allow the magnet to serve as a secure point suring the DC/PC lift. Attach the two 20-Ft slings to the DC rear mount holes, adjust one chain fall to 20-Ft length, attach this chain fall to front central lift point and crane hook, attach second chain fall to the front lift point of the DC, position DC so front mounting pins may be inserted. Raise the front chain fall so the front edge of the DC is lifted vertically, adjust crane to keep drum directly above the hook, adjust vertical to bring the DC back to horizontal, continue until rear slings fall slack. Remove rear slings from rear detector mount points. Attach the free end of the second chain fall to the central magnet or tracks for support. Rotate DC/PC about the front mounting pins by raising the crane or the first chain (crane hook) and slackening the second chain fall (central magnet) to bring the chamber to its upright position. Once rear detector mount points align, insert mount pins. Use the manlift to gain access, remove all slings and chain falls from the crane and DC. (PP-2.5.3.4-09) **Decommissioning Procedure**: Cut all wires and gas lines, move forward on rails, lift off with crane, lay flat on cart, dismantle, outside firm to take structural titanium, rest in dumpster.	4 Days, 8 CAD Tech Days	**ne-20002-006** (Replace regulator on DC/PC gas rack in mixing house)(12/18/2002-12/18/2002) **2003-003/SS2003-0026** (Drift Chamber Repairs:m Lift Table)(1/17/2003-1/23/2003) **ne-2003-007** (Replace Drift Chamber power supplies)(11/19/2003-11/21/2003) **2004-001/TS04-1** (Troubleshoot & Repair DC Electronics)(2/1/2004-3/31/2004) **2004-006/SS-2004-075** (DC Power supply Repair)(5/25/2004-8/1.5/2004) **2004-008/SS-2004-107** (Erect DC Repair Tent)(6/29/2004-8/10/2004) **2005-001/SS-2005-054** (DC Repairs)(2/14/2005-4/1/2005) **2005-003/SS-2005-090** (DC Cable Repairs)(4/6/2005-4/15/2005) **2005-006/SS-2005-098** (DC Repairs)(4/24/2005-5/31/2005) **07-006/DRL-2007-006** (DC East & West repairs)(2/9/2007-2/15/2007) **07-024/DRL-2007-023** (DC East & West repairs)(10/5/2007-12/31/2007) **08-001/SS-2008-113** (Tap into DC supply in a way to flow either 50/50 AR/Ethatine or 50/50 Ar//Ethane +1%Isocanol)(1/22/2008-1/28/2008) **DRL-2009-3** (DC Repairs)(1/8/2009-2/4/2009) **DRL-2009-15** (DC East Repair)(9/24/2009-10/12/2009) **DRL-2009-18** (DC East_West Repairs)(11/16/2009-12/16/2009) **DRL-2010-19** (DC East & West Troubleshooting & Repairs)(12/10/2010-1/11/2011) **DRL-2011-003** (DC East & West Troubleshooting & Repairs)(1/15/2011-3/1/2011) **DRL-2011-020** (DC East & West Troubleshooting & Repairs at the start of run 12)(11/4/2011-12/1/2011)	✓ (Carriage FAB Folder) (DC Cable Routing) (DC/PC installation Procedure)	Slings (2): 20-ft, 6200-lb capacity in vertical configuration 40-Ton Assembly Hall Crane 12-Ton Collision Hall Crane 2 Chain Falls rated at or above 3000-Lb each
Pad Chamber 1/Pad Chamber 3	**Installation Procedure**: PC-1 installed with Drift Chamber, PC-3 installed with TEC. **Decommissioning Procedure**: Remove PC-1 from the back of DC, throw in dumpster. Disconnect PC-3 by cutting all services, unbolt and slide out the bottom, toss in dumpster.	4 Days, 8 CAD Tech Days	**ne-20002-006** (Replace regulator on DC/PC gas rack in mixing house)(12/18/2002-12/18/2002) **07-011/DRL-2007-011** (PC Electronics Repair work permit)(3/23/2007-6/30/2007) **DRL-2009-10** (PC1 Repair)(6/29/2009-9/24/2009) **DRL-2010-1** (PC1EN2 Troubleshooting)(1/21/2010-1/28/2010) **DRL-2010-22** (PC1 East and West Troubleshooting & Repairs)(7/20/2010-11/24/2010) **DRL-2011-014** (PC1 Repairs)(6/29/2011-12/15/2011)	✓ (PC-1 Cable Routing) (PC-3 Cable Routing) (PP-2.5.3.4-08, DC/PC installation Procedure) (PP-2.5.3.4-06, TEC/PC3 installation Procedure)	PC-1: Since installed with the Drift Chamber, requires the same lifting fixtures. PC-3: Requires same lifting fixtures as TEC.
Ring Imaging Cherenkov Detector	**Installation Procedure**: Raise spreader bar above the RICH vessel and attach chain falls connected to double slings to the lifting frame's swivel shackles nearest the vessel's top, attach other two chain falls to lifting frame's swivel shackles nearest the vessel's bottom. Adjust chain falls to proper length to position spreader bar over vessel's C.G. Lift vessel, move it to PHENIX detector carriage, align holes of vessel and carriage pivot mounts. Install pivot pins and one insulating washer. Lock each pivot pin in place. While maintaining vessel's position with crane, relieve tension on the chain falls nearest the pivots transferring the full load to the chain falls nearest the vessel top. Remove chain falls nearest the pivots from the lifting frame and spreader bar and secure the long slings from dangling freely. Relocate chain falls to have one end attached to slings looped around the upper transition plates and one end anchored to the bottom of the carriage tracks or swivel shackle (2.5 ton) bolted to the floor. Slowly raise the vessel with the crane while, simultaneously lengthening the chain falls until vessel rests upon the rear mounts. Do not allow chain falls to become slack. Stabilize the vessel with two connections each having one end chain-zero to the vessel and one to the carriage crossbar. Remove chain falls from transition plates and floor anchor. Reinstall chain falls to original position from spreader bar to lifting frame's lower swivel shackles. Position spreader bar over lifting frame C.G. Tighten chain falls to assume load. Attach tag lines to lower end of lifting frame. Remove bolts attaching upper transition plates to vessel. Remove bolts attaching lower transition plates to vessel pivot. Remove connections, install stabilizing bars to top of vessel. (PP-2.5.3.4-01) **Decommissioning Procedure**: Cut service lines, unbolt RICH north and south, attach to crane at vessel's center of gravity, move to truck, move to staging area, salvage all PMT modules, dispose of all remaining parts.	(4 Days, 8 PHENIX Tech Days to strip out modules from RICH and dispose of remainder at staging area) (4 Days, 8 CAD Tech Days) Total= 8 Days, 8 PHENIX Tech Days, 8 CAD Tech Days	**98-008** (Rotate RICH Detection) **98-009** (Remove Top of Tent) **99-011** (Remove Gas Vessel and Transport) **98-012** (Replace transition plates & pivots on RICH Vessel) **ne-1999-005** (Welding repair leaks in RICH vessel)(8/9/1999-8/9/1999)	✓ (Lifting I-Beam # 002-0207-033) (Pivot Pin dwg # 002-0501-303) (insulating Washer dw # 002-0501-304) (Lifting Frame # 002-0207-019) (Upper Transition Plate dwg # 002-0207-018 Part 2) (Lower Transition Plate dwg # 002-0207-081) (Vessel Pivot dwg # 002-0501-300) (Vessel Stabilizing Bar dwg # 002-0207-082) (Carriage Pivot dwg # 002-0501-301) (RICH installation Procedure, PP-2.5.3.4-01)	(2) Pivot Pins, P/N 002-0501-303 Spreader Bar Chain Falls Doubled Slings Lifting I-Beam Swivel Shackles Load Cell Crane
Time Expansion Chamber	**Installation Procedure**: Position TEC sector 0 in PHENIX AH on TEC cart under 40-Ton crane hook.Attach swivel eyes to TEC sector plates. Attach 40-Ton crane hook to TEC 2-Ton lifting fixture and slings from lifting fixture to the swivel shackles on TEX sector plates. Configure for horizontal lift. Lift TEC sector off the cart and onto floor in 10008 resting the bottom of sector plates on 4" x 4"s. Remove weight from crane, disconnect slings, take TEC 2-Ton lifting fixture off crane hook, remove swivel eyes from sector plates. Lifts of sectors E1, E2, and E3 should repeat the previous procedures for removing each sector from TEC cart. Attach swivel eyes to sector plates, attach yellow 30-Ton lift beam to sector using 40-Ton crane hook and slings to be configured for vertical lift. Lift TEC sector off floor moving from horizontal to vertical position. Move sector to East Carriage. Place bottom of Aluminum sector plates on sector mounts. Bolt on and tighten all bolts to respective mounts. Remove weight from crane, disconnect slings and remove the swivel eyes. Adjust mount tubing 60 to proper angle and position, attach two wire-rope turnbuckles between sector mounts and sector plates. Repeat the previous steps for the remaining sectors, E1, E2, E3 with their respective plates and mounts. (Uses the same lifting fixtures). (PP-2.5.3.4-06) **Decommissioning Procedure**: Unbolt, remove 1 sector at a time using crane, disassemble/cut up into disposible chunks and discard in dumpster.	4 Days, 8 CAD Tech Days	**ne-20002-004** (Supply 92%Ar + 8% CH4 to TEC wire Chamber for test)(9/24/2002-9/24/2002) **06_011/DRL-2006-005** (TEC Repairs)(6/30/2006-10/15/2006)	✓ (TEC Cable Routing) (PP-2.5.3.4-06, TEC/PC3 installation Procedure) (TEC Assembly dwg #002-0206-1019)	30-Ton Lift Beam (1) S/N 92724, Model # 205-30-14 Swivel Eyes: 3/8-16 Swivel Eyes (4), 1000 lbs capacity 3/4-10 Swivel Eyes (2), 5000 lb capacity Slings: 2-Ton Capacity (2) TEC 2-Ton H lifting fixture (1) S/N 02208, Model # 259-2-80, Test SE8302089 Wire Rope Turnbuckle Assembly Drawing 002-0206-1018 (2) Chain Fall 3-Ton Capacity (2) 4"x4"x7' wood blocks (2)
Time of Flight	**Installation Procedure**: Before installing lifting fixture on to the ToF, verify all ToF's top bearings have been shimmed properly to ensure proper engagement of the bearings into the lift fixture groove. With fixture laying horizontally on cribbing with I-bream and C-channels on topside, attach 1-Ton-6' slings choker style around the outermost channels at the four corners. Attach four slings to crane hook and move the fixture to a position abutting the end of the ToF panel assembly with fixture grooves aligned horizontally to the ToF's mounting bearings. Carefully move the fixture horizontally engaging the ToF's top and bottom mounting bearings into the bearing grooves in the fixture allowing the slings to support the fixture weight. Before lifting, install the top rail to TOF safety jackscrews then the safety retaining screws. Install four C-clamps on to the fixture at each end of the TOF (top and bottom) to prevent movement of the ToF within the fixture. Lay and fasten cables with cable ties to back of lift fixture C-channels evenly distributed for equal weight distribution. **CAUTION: Do not lift assembly without C-clamps, jackscrews, and safety screws installed.** Lift assembly to transfer it to storage table for delivery to building 1008. Once on the table, remove C-clamps, jackscrews, and safety screws and remove lift fixture. ToF assembly shall either via flat bed truck, strapped to a rolling assembly table, remove ToF assembly and rolling table together, remove strapping from ToF and assembly table. Install lift frame as described above, Verify all clamps are secure, lift assembly with 10' long 2-Ton sling attached to fixture lift rings. Bring cables around to the front of the ToF panel and secure. Move assembly adjacent to the NORTH side of east carriage and appropriate sector level. Readjust position of hoist rings on fixture to fine-tune the hanging position to match sector level, install C-clamp to far end of permanent installation rack on carriage. From lift fixture, remove the two C-clamps closet to the permanent tracks and remove the four jackscrews and four safety screws. Roll ToF panel into appropriate position, install another C-clamp to permanent tracks to temporarily secure the TOF assembly until both panels are installed onto tracks. Remove fixture from ToF permanent rails. (PP-2.5.3.4-08) **Decommissioning Procedure**: Cut all service lines, disconnect and remove all TOF-E services, disassemble, remove and move to safe storage area.	5 Days, 10 CAD Tech Days	**2005-008/SS-2005-150** (Install TOF Mockup)(9/23/2005-11/30/2005) **2005-010/SS-2005-197** (Install TOF Mockup extended)(12/12/2005-4/30/2006)	✓ (Time of Flight installation Procedure, Figures 1-4) (TOF Hoist Frame Assembly dwg 3002-0208-500) (TOF Carriage Track Assembly dwg #002-0208-501)	(4) Slings (Wire Rope Slings, 4 ft long min (horizontal lift) (1) Sling rated 2-Tons min, any length suitable (Installation Lift) (1) Shackle rated 2-Tons min Building Crane rated 2-Tons min (2) Tag lines of sufficient strength (10) C-clamps (12) 3/8-16x1" long hex socket head cap screws (1) 6/16 hex wrench (4) 3/8-16 x 1 1/4 long st. stl. hex head machine screws (4) 5/16-18 x 1 1/4 long st. stl. hex head cap screws ToF hoise, BNL drawing no. 002-0208-200 Splice Plate and shims, BNL drawing no. 002-0208-530
Electromagnetic Calorimeter	**Installation Procedure:** **Sector "0" :** Attach lifting trunnions to EmCal frame, attach yellow 30-Ton EmCal lift beam to sector using 40-Ton crane hook and 15-Ton slings. When load has been taken onto the crane, unbolt the two feet from frame so they can be removed with forklift. Move sector to carriage and place on its upper mounting brackets. Verify EmCal trunnions are sitting properly within the mounting brackets. Disconnect beam and slings. Install two swivel eyes, min 3-Ton capacity, in holes drilled in vertical towers of carriage. Remove upper lifting trunnions from the frame, install two swivel eyes, min 3-Ton capacity, in lower lifting mounting holes. Install shoulder eyes (4), min 3-Ton capacity per side, in holes oin bottom of EmCal frame. Attach two chainhoists, min 3-Ton capacity each, between two pairs of swivel eyes, install 3-Ton capacity sling in series with chainhoist. Rotate sector into final position, attach two slings between shoulder eyes on bottom of sector and the two carriage lifting weldments on front face of carriage. Bolt two keeper bars to back of lower brackets. Remove the two slings, chainhoists, swivel & shoulder eyes. **Sector "1" :** Attach lifting trunnions to EmCal frame, attach yellow 30-Ton EmCal lift beam to sector using 40-Ton crane hook and 15-Ton slings. When load has been taken onto the crane, unbolt the two feet from frame so they can be removed with forklift. Move sector to carriage and place on its upper mounting brackets. Verify EmCal trunnions are sitting properly within the mounting brackets. Disconnect beam and slings. Install two swivel eyes, min 2-Ton capacity, in holes drilled in vertical towers of carriage. Remove upper lifting trunnions from the frame, install two swivel eyes, min 2-Ton capacity, in lower lifting mounting holes. Attach two chainhoists, min 2-Ton capacity each, between two pairs of swivel eyes, install 2-Ton capacity sling in series with chainhoist. Wrap a sling, min 2-Ton capacity, horizontally around body of EmCal frame. Rotate sector into final position, tighten the sling, bolt two keeper bars to back of lower brackets, remove sling, slowly release load from two come-alongs and disconnect them, remove all swivel eyes. **Sectors "2" & "3" :** Transfer sector from normal stands to rocker-feet, attach lifting trunnions on yellow 30-Ton EmCal lift beam to triangular attachment plates using 40-Ton crane hook. Attach triangular attachment plates to EmCal frame. Slowly lift EmCal sector, rolling gently forward on to rocker-feet. When load has been taken onto the crane, unbolt the two feet from frame so they can be removed using a forklift. Move sector to carriage and place in its upper mounting. Lower crane until sector engages its lower mounting bracket, ensure crane follows the hook. Disconnect triangular attachment plates from EmCal frame and remove along with lifting beam. Bolt two keeper bars to back of support brackets. (PP-2.5.2.9-01) **Decommissioning Procedure**: Cut all service lines, Remove EM Cal Racks and toss in dumpster, Disconnect and remove all EM Cal modules and move to safe storage area.		**ne-1993-004** (Put EMCAL detector on truck)(8/31/1993-8/4/1998) **06_012/DRL-2006-006** (EMCal Repairs)(6/30/2006-10/15/2006)	✓ (EmCal installation Procedure PP-2.5.2.9.01, No Drawing Numbers)	30-Ton EMCal Lift Beam 2'6" long, 15-Ton Slings (2) M-24 Shoulder Eyes, 3-Ton Capactiy (4) Swivel-Eyes: 3-Ton Capacity (4) 2-Ton Capacity (4) Chainhoists: 3-Ton Capacity (2) 2-Ton Capacity (2) Slings: 3-Ton Capacity (2) 3-Ton Capacity (2) 2-Ton Capacity (3) Triangular attachment plates (2)
PbSC East & PbGl	**Installation Procedure**: Modules installed with the EmCal. **Decommissioning Procedure**: Disconnect from EM Cal and move to safe storage area.	10 Days, 10 PHENIX Tech Days, 10 CAD Tech Days	N/A	✓ (PbSC East Cable Routing)	Manlift
Electronics Racks	**Installation Procedure**: Electronics Racks installed above and behind the East Carriage with electronics respective to each detector. **Decommissioning Procedure**: Strip all unwanted electronics from racks, cut all wires, remove all inner components and dispose except for rack components and main power supplies. Keep racks.	strip all racks, 1/4 Day 1/2 PHENIX Tech Day to remove from EC to AH floor, 1 Day 4 Rigger Days to move all EC racks to safe storage, 24 racks to be salvaged, Total = 30 Days, 86 PHENIX Tech Days, 4 Rigger Days.	**PAG-2012-001** (Install Power Meter modules on the Rack Room East & West HVAC condensers)(8/22/2012-n/a) **DRL-2011-002** (FEM Troubleshooting)(1/18/2011-2/1/2011) **DRL-2014-002** (DC East FEM Repairs during run 14)(3/11/2014-n/a)	✓ (East Carriage North Side, East Carriage South Side Cable Routing)	Railing to ensure the safety of the on-carriage work away from the building wall Man-Lifts to hook up electronic racks to crane Crane Equipment necessary to strip electronics
Deconstruct Carriage and dispose/recycle	**Decommissioning Procedure**: Unbolt and remove rack platforms to floor level for cut up. Cut up rack platforms into disposable segments and stack outside AH for vendor removal. Rotate carriage frame 90 degree to disassemble. Disassemble services and discard in dumpster. Disassemble/cut carriage frame into disposable segments and stack outside of AH for vendor removal.	20 days, 40 CAD tech days		✓ (Tower Lifting Details dwg # R0002-0501-193) (Carriage Arm Lifting Details dwg #R0002-0501-102/104) (Base Frame Lifting Details dwg #R0002-0501-100) (Top Support Beam Lifting Details dwg #R0002-0501-174) (Cross Brace Lifting Details dwg #R0002-0501-119)	
Total EC		4 Rigger Days, 92 CAD Tech Days			

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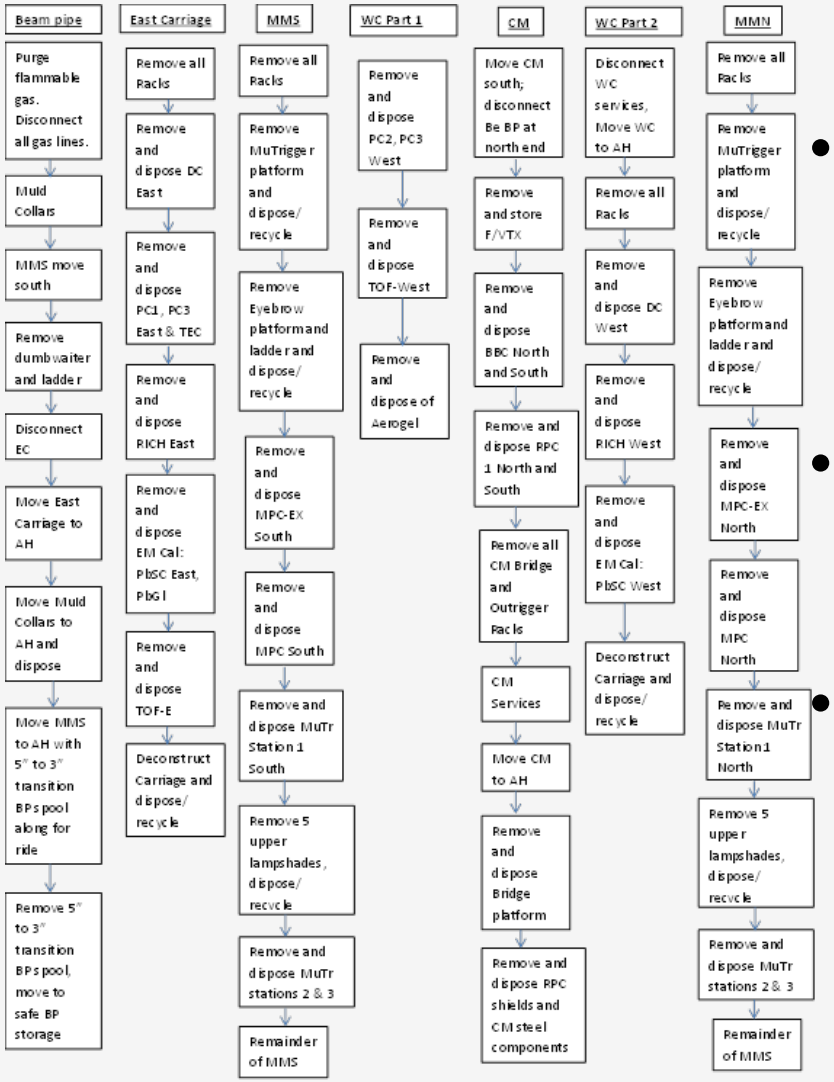
PHENIX Decommissioning Process



- Organized flow of decommissioning procedures for each section of the PHENIX.
- Each section has specific order of detector disassembly.
- Helps organize the decommissioning procedures for easier viewing purposes.

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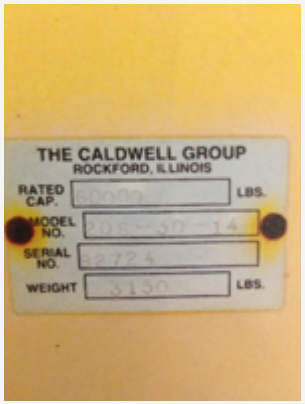
Photographs of Lifting Fixtures



- With the list of lifting fixtures in the spreadsheet, photographs of some of the lifting fixtures in the “boneyard” were collected to help identify them.
- These lifting fixtures will be used in the decommissioning of the PHENIX detector.
- For example, the fixture with the model number 20S-30-14 will be used for the Time Expansion Chamber in the Carriages.

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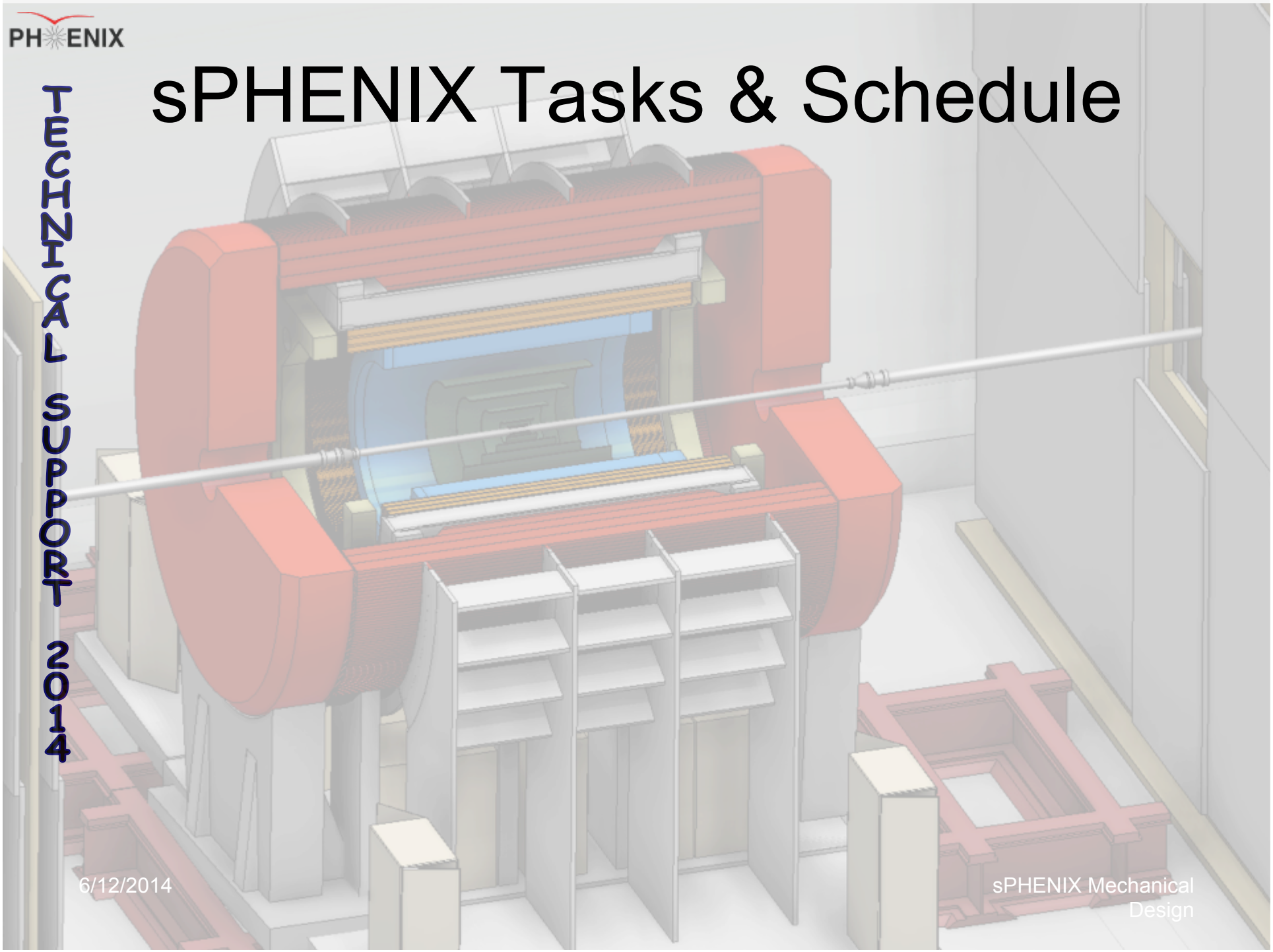
sPHENIX Tasks & Schedule



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Regular sPHENIX Meetings

• Bi-weekly sPHENIX engineering meeting	Thurs 11:00 am
• Bi-weekly sPHENIX subsystem meeting	Thurs 11:00 am
• Bi-weekly magnet meeting with SMD and CAD	Wed 1:00 pm
• Weekly PMG meeting	Tues 4:00 pm
• Weekly similationsmeetings	Fri ?

Need to add:

• Weekly sPHENIX Project team meeting	Tues 10:am
• Bi-weekly meeting with C-AD (Yousef and Phil)	TBD

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Work for the Next Two Months

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- **Finish WBS including dictionary**
  - **Import to MS-Project**
  - **Add task durations and milestones to create v1 of the schedule**
  - **Define resources**
- **Begin design packages for sPHENIX reference design**
  1) **Global system**
  2) **HCal Outer**
  3) **HCal Inner**
  4) **EMCal**
  5) **Calorimeter Electronics**
  6) **DAQ/Trigger**
  7) **Tracker**
  8) **Magnet**
  9) **Decommissioing**
- **Begin Cost estimate spreadsheets**
- **Start on Basis of Estimate documents**
- **Finalize R&D plan for the next 2 years**
- **Identify issues that require a down-select process and define the process**
- **Start on other support documentation including Cost Book**

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Documentation We Need to Create for CD-1 Review

- Conceptual Design Report
- Cost, Schedule and Labor estimates
- WBS including Dictionary and Cost Book
- Basis of Estimate documents
- Contingency Estimate – Bottoms up and risked based
- Project Execution Plan
- Safety and Hazard Analysis
- Quality Assurance Plan
- Acquisition Strategy
- Risk Analysis and Mitigation document
- National Environmental Policy Act document
- Integrated Project Management Team document

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BABAR Magnet Update

- Meeting yesterday at magnet division
- Reviewed possible stack modifications.
  - Some iintrusion into HCal is unavoidable
  - Kovac sending proposed modification step files to Rich, then we will incorporate into envelope drawing
  - Proposed solution minimizes modifications to “doghouse” and makes all modifications at existing joints in current leads and LHe fittings.
  - Mag Div will evaluate thermal consequences.
  - Proposed solution is reasonable in cost and may be incorporated prior to Magnet tests at 912
- Shipping review during week of 7/28

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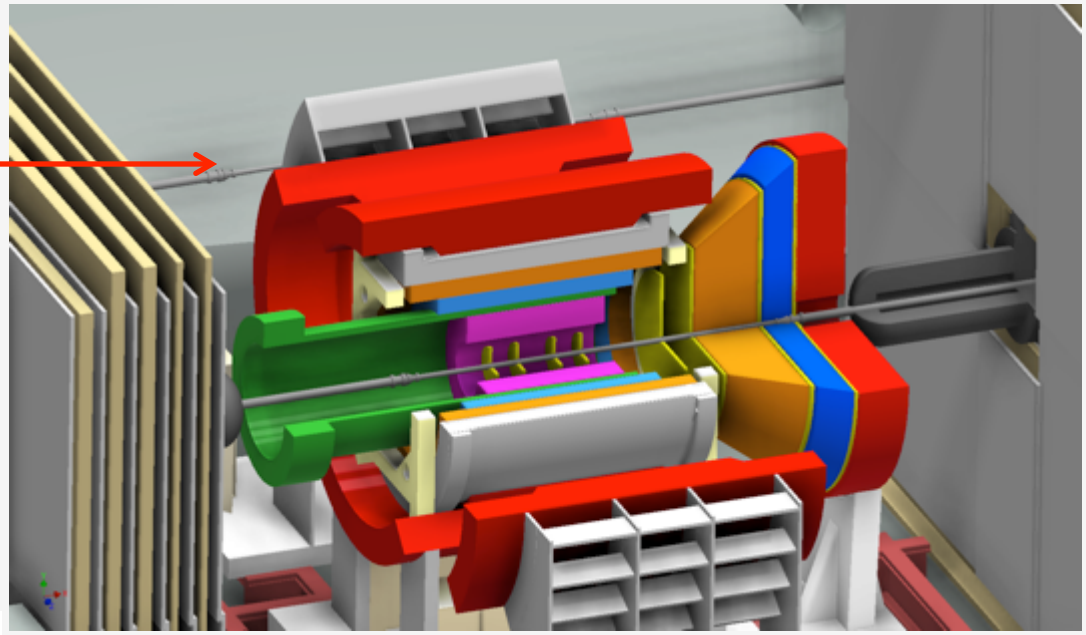
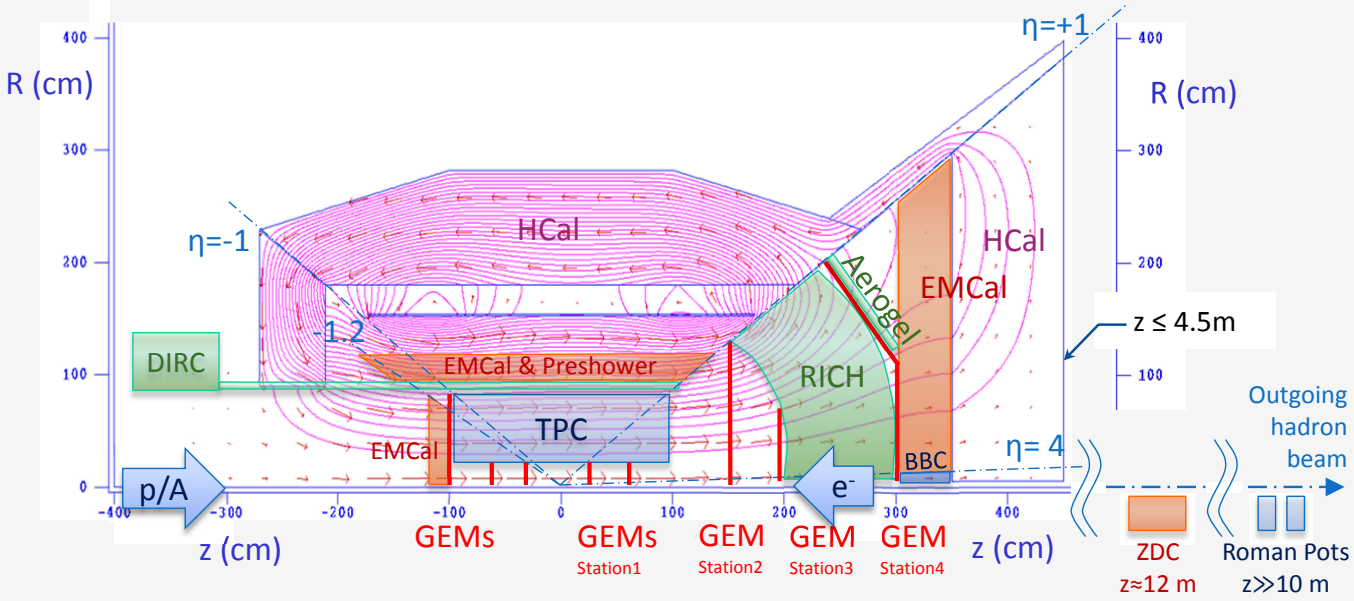
2ft high x 1 ft wide clearance needed for e-ring components



ePHENIX



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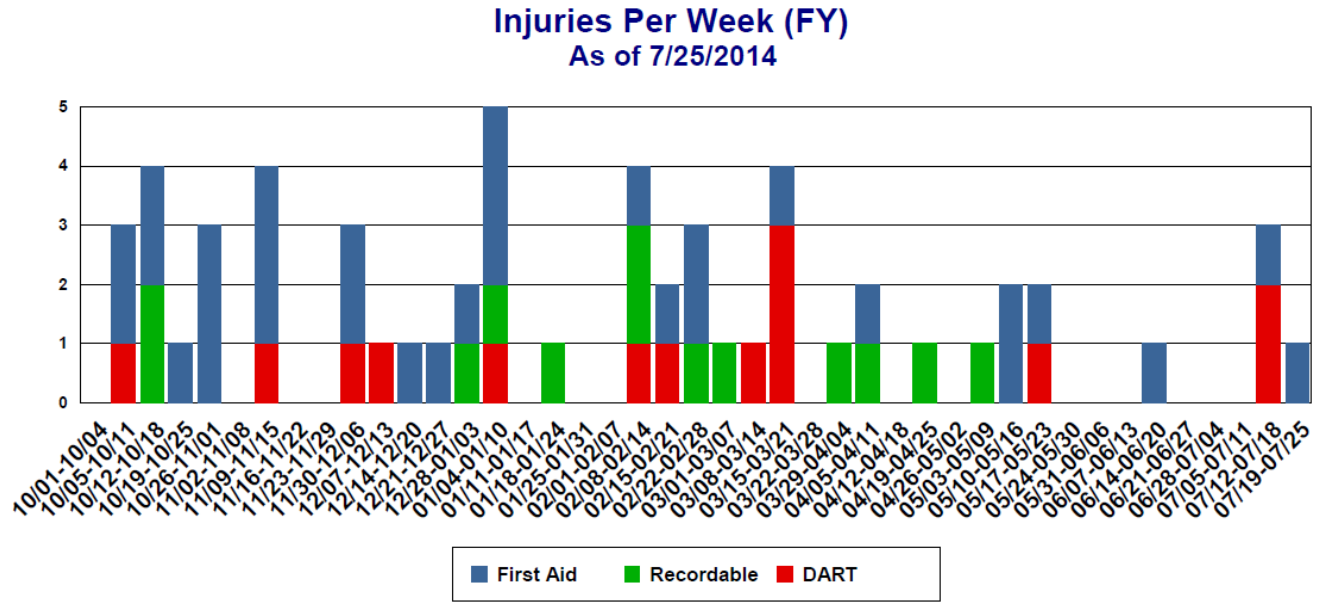

Injury Status:

FY14 YTD: DART – 14, TRC – 27, First Aid – 31
FY13: DART – 16, TRC – 38, First Aid – 53
FY12: DART – 19, TRC – 36, First Aid – 69

FY13 Injury Listing: https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx

Recent Injuries		
7/16/14	DART	An employee struck his head against a low ceiling beam, injuring his neck. At the OMC, an examination was held and the employee was sent home for the rest of the day. Later that day, the employee went to a local ER. After diagnostic testing, the employee was instructed to remain home for the next two days.
7/15/14	DART	An employee slipped and fell in Building 98, injuring her back. At the OMC, the employee was evaluated and sent home to rest. The following day, the employee called in reporting that she was having back pain. This is recordable and a DART case.
7/21/14	First Aid	An employee was performing equipment maintenance and was bitten on the hand by a spider. At the OMC, first aid was given.
7/18/14	First Aid	An employee was turning a valve making some machine adjustments and injured his elbow. At the OMC, first aid was given and the employee returned to full duty.

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Recent Events		
7/15/14	Non-Reportable	An increasing amount of makeup water was observed in the water system that cools magnets in the beamline from the Linac to the BLIP, indicating a leak. The Water Group went into the BLIP spur of the Linac to determine the cause of the leak and found a leaking hose connection to a magnet in the beamline. After consultation with Linac Operations staff, it was determined that the water for this magnet could be isolated and the magnet power kept off without affecting the beam transport from Linac to BLIP, i.e., BLIP could continue running. The cooling water lines to the magnet were then isolated by closing the valves. The tritium concentration of the cooling water system is above the drinking water standard. However, all water leaked into secondary containment. There was no environmental release or personnel contamination. A critique will be completed by the Collider-Accelerator Department (C-AD) to determine if improvements can be made to the water system monitoring controls to reduce recurrence of this operational concern. During the upcoming Linac and BLIP shutdown, which is scheduled for early August, the water hoses will be replaced and tested, and this cooling water system will be drained and refilled to reduce the tritium concentration. (Event Link)
7/14/14	Non-Reportable	A Kubota was travelling on Yale Rd, while a worker on the opposite side of the road was using a weed whacker. The worker stopped weed whacking when the Kubota approached and restarted once it passed. The Kubota driver then noticed a small crack on the driver side window. The driver stopped and opened the vehicle door, at which point, the window shattered. There were no injuries associated with this event. BNL Police are investigating the accident under their reporting system. (Event Link)
7/11/14	Non-Reportable	There was a minor vehicle accident involving an employee who was working on overtime for the Central Complex. While backing out by Building 918, the employee backed the vehicle into the side of another parked vehicle. There was only minor damage. The BNL Police were notified and conducted an investigation. There were no injuries and no spills of oil or antifreeze. (Event Link)
7/18/14	Non-Reportable	While moving equipment, an employee noticed a thermal hot spot on the casing of a 208V baseboard heater. The heat should have been off, as the thermostat was set to 40 degrees F (on an 80-degree day). An Electrician promptly responded to investigate the situation and found a high resistance path from one baseboard heater that had an ungrounded or poorly grounded case to an adjacent grounded case, which caused the joining casing clip to heat up. The investigation found that 12 to 20 volt potential was present across the two baseboard casings. The clip used to connect the baseboard casings for aesthetic reasons was charred at each end. There was no additional damage to property and no electrical shocks. The immediate action was to remove the entire series of baseboard heaters from the circuit. The circuit and the heaters were tagged with caution tags, stating the reason they are out of service. The long-term plan is to replace the heaters and bring in a grounding circuit to each device. (Event Link)
7/17/14	SC-4	After transferring waste within the Waste Management (WM) Facility (Building 865), a WM technician alarmed the portal radiological monitor when exiting the area. Contamination was detected on the technician's clothing (i.e., pants). The pants were collected for further analysis. On July 18, 2014, the source of contamination was verified to not be radon. Further survey showed a discrete particle of 200,000 DPM on the pants. (Event Link)
7/15/14	SC-BNL	At approximately 8:51 pm on 7/15, BNL experienced a site-wide power dip due to an electrical storm. The power dip resulted in the Building 740 cryogenic system shutting down. The superconducting RF cavity was automatically isolated from the main cryogenic system per design in response to the power dip. The primary pressure relief device on the cryocavity failed to adequately open resulting in over pressurization of the RF cavity and release of gaseous helium to atmosphere through the system rupture disk. There were no injuries or threats to personnel (i.e., all released He gas was directed outdoors). The pressure relief valve was certified by the manufacturer and is being returned for full engineering evaluation to determine the cause of failure. Testing of an in-house spare relief valve showed it to operate as specified by the manufacturer (open at 1.41 bar). Testing of the failed relief valve showed it did not completely open until 1.61 bar which exceeded the rupture disk rating of 1.55 bar. (Event Link)

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Where To Find PHENIX Engineering Info

2014 Shutdown Continues !

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm